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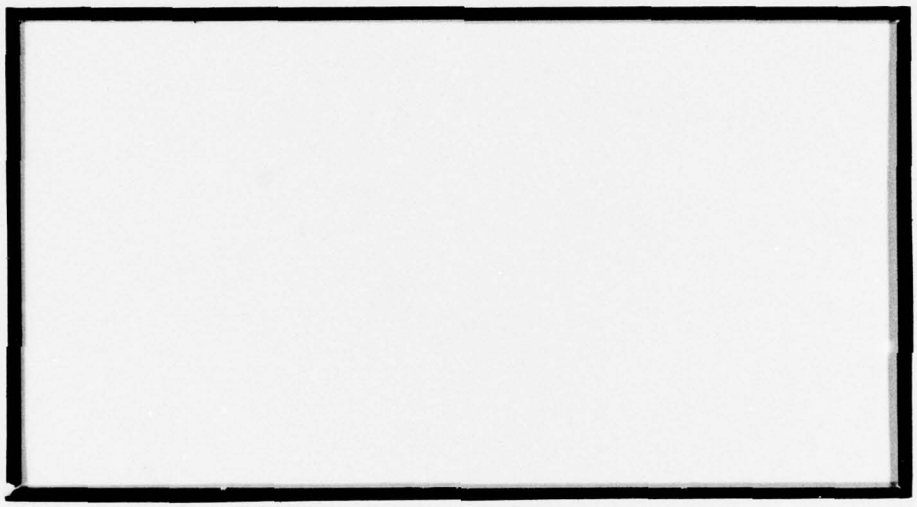

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THE EFFECTS OF ORGANIZATIONAL FUNCTION ON RESPONSES: THE MEDIATING ROLE OF TECHNOLOGY AND JOB CHARACTERISTICS[1]

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Measures of job characteristics, job satisfaction, internal work motivation, and re-enlistment intentions were taken from 910 Army National guardsmen and 608 Air National guardsmen. Army guardsmen were sampled from 28 units, representing 8 functional specialties that were located throughout a mid-western state. Air guardsmen were sampled from each of two functional specialties within three large Air Guard bases. The three bases were considered to represent three levels of technological complexity. These data were

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used to examine the relationships among functional specialty, technology, job characteristics, and responses. It was hypothesized that unit-level measures of technology and individual-level measures of job characteristics would account for Army functional specialty differences on responses. In addition, the independent influences of overall base technology and functional specialty on both job characteristics and attitudes were explored.

Significant and substantial relationships were found between job characteristics and response measures. Significant multivariate effects were found for the eight Army functional specialties on both job characteristics and responses. Multivariate effects were also found for both base technological complexity and functional specialty on job characteristics and responses. Job characteristics and technology were able to account for group differences in work satisfaction and internal work motivation but not other response measures. The results are discussed in terms of the importance of the task itself to the understanding of attitudinal and behavioral differences among organizational functional specialties.

Abstract

Measures of job characteristics, job satisfaction, internal work motivation, and re-enlistment intentions were taken from 910 Army National guardsmen and 608 Air National guardsmen. Army guardsmen were sampled from 28 units, representing 8 functional specialties that were located throughout a midwestern state. Air guardsmen were sampled from each of two functional specialties within three large Air Guard bases. The three bases were considered to represent three levels of technological complexity. These data were used to examine the relationships among functional specialty, technology, job characteristics, and responses. It was hypothesized that unit-level measures of technology and individual-level measures of job characteristics would account for Army functional specialty differences on responses. In addition, the independent influences of overall base technology and functional specialty on both job characteristics and attitudes were explored.

Significant and substantial relationships were found between job characteristics and response measures. Significant multivariate effects were found for the eight Army functional specialties on both job characteristics and responses. Multivariate effects were also found for both base technological complexity and functional specialty on job characteristics and responses. Job characteristics and technology were able to account for group differences in work satisfaction and internal work motivation but not other response measures. The results are discussed in terms of the importance of the task itself to the understanding of attitudinal and behavioral differences among organizational functional specialties.

Introduction

It is becoming clear that the environments provided by complex organizations can indeed influence attitudes and behaviors of those who work within them. Reviews by Porter and Lawler (1971) and Berger and Cummings (1975) conclude that several aspects of organizational structure have an impact on members' attitudes and behaviors. Also, several studies by Hulin and associates (Adams, Laker, & Hulin, 1977; Herman, Dunham, & Hulin, 1975; Herman & Hulin, 1972; Hulin, Hom, & Herman, 1976; Katerberg, Hulin, & Herman, 1977), have shown in several different organizational settings that one's position in the organizational structure is related to one's perceptions of and affective responses to the organization and the job.

It has also been repeatedly noted that explanations for these relationships have been slow in development. Several suggestions have been offered, but few have been examined in research. The purpose of this study is to explore a possible explanatory model for the relationship between functional specialty and members' affective responses.

Functional Specialty

Functional specialty is one variable in the domain of organizational structure that has been used in research to represent the horizontal partitioning of organizations along functional lines or the horizontal differentiation of functional subsystems within organizations. The theoretical basis for the construct can be found in the work of several organizational theorists (Katz & Kahn, 1978; Lawrence & Lorsch, 1967; Schein, 1970; Weber, 1947).

The systems approach to organizations, as developed by Katz and Kahn (1978) notes that functional or horizontal differentiation is one of the basic characteristics of organizations as open systems. This idea of hori-

zontal, as well as vertical, divisions of labor is part of nearly every discussion of organizational structure (Hall, 1972). Organizations seem to spread out horizontally as complex work is subdivided for accomplishment of the overall task (Hall, 1972; Miller, 1976).

The psychological literature on the impact of organizational characteristics on attitudes and behavior contains little discussion of the effects of these functional divisions in organizations. The line-staff dichotomy has been the focus of most of the attention in this literature and the cumulative results have been inconsistent (Berger & Cummings, 1975). This is, however, only one level of horizontal differentiation that can be considered. Several other possible divisions may be used to partition the organization into functionally related groups and most complex organizations are amenable to more precise division than the line-staff distinction. Several studies have used such a task based conceptualization of functional specialty in research on members' attitudes and perceptions. Herman and Hulin (1972) investigated the relationship of organizational positions, demographic characteristics and job attitudes in one large manufacturing organization. Functional divisions, one of three organizational variables used, accounted for 60% of the variance in job attitudes. The discriminant solution obtained for departments indicated a clear main effect for the function of the departments.

Herman, Dunham, and Hulin (1975) demonstrated similar relationships within another organization while controlling for individual differences. Again, departments, representing different functions, were found to be related to differences in job attitudes. Having demonstrated the stability of the results in two samples with appropriate statistical control, the authors suggest that the next step should be identification of variables that will explain the relationship.

Hulin, Hom, and Herman (1976) explored the generalizability of some of the earlier findings over two printing plants of the same organization. In one of the discriminant function analyses reported, five functional groups in each plant were clearly differentiated from each other on composites that accounted for 34% of the between group response variance. Although the functional groups in the two plants were not ordered precisely in the same way, a clear distinction between line and staff departments was evident in both plants. The authors suggested that differences in tasks may be, in part, responsible for the differentiation observed.

It is also noteworthy that there was a main effect for plant. The two plants, while producing similar products, were different in the printing technology used. The plant showing the highest levels of satisfaction was newer and used very modern and highly automated technology. The nature of the work may well be influenced by these differences between the plants.

Adams, Laker, and Hulin (1977) studied the effects of functional specialty and hierarchical level on satisfaction and perceptions of leader behavior. In a multivariate analysis of variance they reported significant main effects for both function and level as well as a significant interaction between these factors. In a discriminant function analysis used to interpret the nature of these effects, the authors reported clear differences between production function (bindery and pressmen) and other groups that were somewhat removed from production (preliminary, maintenance and staff). The functional group differences accounted for a majority of the between group variance on responses, showing that functional specialty, independently of level, accounts for variance in responses.

Newman (1975) attempted to explain the relationship between several organizational position variables, including functional specialty, and job

attitudes through the use of a climate-like construct, called Perceived Work Environment (PWE). The instrument used to measure PWE was very broad, including items measuring leadership behavior, physical surroundings, task characteristics, participation and other perceived characteristics of the work and work setting. This wide ranging set of environmental variables was able to account, in part, for the effects of departments and functional specialties on responses. Both departments and functional groups showed large differences on PWE dimensions as well as on responses. Although the analyses reported do not allow estimation of the adequacy of PWE in accounting for the relationship, all the results are consistent with the hypothesis that perceptions of the work environment mediate the effects of positional variables on responses. Newman (1975) argued that the locations in organizational environments indexed by such variables as department and function have different work environments, including tasks and interpersonal ties and that these different conditions contribute to the individual's formation of affective responses to the work situation.

Newman's work has proceeded furthest in exploring the intervening variables that may explain the structure-response relationship. His results are encouraging enough to pursue the precise measurement of some of the most salient aspects of the work environment and explore these as intervening links between functional specialty and responses.

Consideration of the meaning and nature of functional specialty leads to a useful model that may explain the observed effects of this aspect of organizational structure on responses. For example, Lawrence and Lorsch (1967) and Katz and Kahn (1978) describe organizations as having several functional subsystems that have different primary tasks while at the same time contributing to overall organizational goals. These tasks require

varied quantities and qualities of inputs, different processes in throughput, and produce very different outputs (Cherns & Clark, 1976; Hunt, 1976). The sophistication of personnel, knowledge, amount of structure, and freedom may also vary among various subsystems.

It may be that functional specialties within organizations influence members' attitudes and behavior, in part, because of the nature of the tasks assigned to them. Tasks of each functional specialty may have a characteristic technology that is used to process the input, control the throughput, as well as handle and distribute its output. The level of technology may, in turn, determine the characteristics of individual tasks, as well as other aspects of the work environment (Rousseau, 1977, 1978a; Shepard, 1977; Taylor, 1971). Thus, technology may be a tenable construct to explore as part of a network of relationships explaining the effects of function.

Technology

Perrow (1967) has defined technology as "the actions that an individual performs on an object, with or without the aid of tools or mechanical devices in order to make some change in that object." While it would seem that technology is an important variable for understanding behavior in organizations, most of the recent research on technology in organizational research has been centered on the relationship of technology and organizational structure (i.e., Hickson, Pugh, & Pheysey, 1969; Woodward, 1965; Zwerman, 1970), as the so-called technological imperative.

Although there has been little concensus on that issue (Riemann, 1977; Rousseau, 1978c;Scott, 1975), this work has resulted in a great deal of renewed interest in a concern for the impact of technology on the nature of work. Shepard (1977) concludes that "there seems to be fairly widespread agreement that whether or not technology is the major determinant of

organizational structure, the nature of work is heavily influenced by the technological arrangement adopted." Most researchers in the area now agree that technology can influence characteristics of work such as physical effort required, the work pace, the degree of control, skill levels, and degree of specialization (Hunt, 1976; Meissner, 1969).

A series of studies by Rousseau (1977, 1978a, 1978b) has explored the relationships among technology, job characteristics, job attitudes and behaviors. Rousseau (1977) presented data that clearly showed that both job characteristics and technology are related to job attitudes and that technology has a significant relationship to the nature of the work as measured by perceived job characteristics. The degree to which job characteristics can account for the relationship between technology and responses was not evaluated in this study however.

Rousseau (1978c) addressed this question and found that job characteristics can account for a large portion of the variance in responses that was related to structural, technological, and positional variables.

In a third study, Rousseau (1978a) used Thompson's classifications and aggregated job characteristics at the unit level to predict individual responses, in this case a composite of three attitudinal measures. Individual job characteristics were also used in combination with technology to predict the response criterion. Hierarchical regression analyses of the criterion on technology and both individual and aggregate job characteristics indicated that job characteristics were able to account for the differences among technological types on the attitudinal response criterion.

The series of studies by Rousseau suggests that a rather crude technological typology can account for differences in both perceived job characteristics

and responses. Further, data presented in two of these studies indicate that job characteristics may account for a portion of the relationship between structural, positional, and technological variables and worker responses. Having established a theoretical link between technology and job characteristics with basis in the literature, it remains only to consider the final link in the model, the relationship of job characteristics and responses.

Job Characteristics

Job design and task characteristics have been the focus of considerable research in an effort to demonstrate that such strategies are the panacea for a wide range of motivational, attitudinal and behavioral problems faced by organizations. The nearly 25 years of research surveyed by Hulin and Blood (1968) however, was inconclusive on the basic predictions as result of a wide range of methodological and conceptual problems.

A more recent review (Pierce & Dunham, 1976) comes to a slightly more favorable conclusion, noting that a fair amount of consistency is emerging for some of the job design propositions. Whereas the dimensionality of the most frequently used measure (JDS) is questionable, and the moderating effects of several organizational and individual characteristics inconclusive (Brief & Aldag, 1975; Hackman et al., 1978; Katerberg, Hom, & Hulin, 1978; Oldham, 1976; Stone, 1976; White, 1978), a general statement can be made that for most individuals, greater job complexity is related to higher levels of work satisfaction, internal work motivation, and other affective responses (Hackman & Oldham, 1976; Hackman et al., 1978; Pierce & Dunham, 1976; Rousseau, 1977; Stone & Porter, 1975; Umstot, Bell, & Mitchell, 1976). Presumably these positive responses are the result of

receiving the intrinsic rewards associated with doing the task as well as with being successful at it (Staw, 1976). In another review of the research, Steers and Mowday (1977) agree that the empirical research on the relations between job characteristics and responses is extensive and convincing. But they note that theoretical models to explain these relationships remain limited.

Several theories have been offered for the relationships between job characteristics and responses such as job satisfaction, motivation, and performance (Atkinson, 1964; Hackman & Oldham, 1976; Scott, 1966; Staw, 1976). In terms of their major predictions of the relationship between job complexity and responses, however, few differences can be found. Thus, while our understanding of the processes by which the design of work influences responses remains open, the existence of such relationships is now beyond question. Considerable evidence now makes it clear that job complexity or scope is generally positively related to satisfaction, work motivation, and other affective responses and behaviors. With this relationship established at this point, it is possible to move a step closer to a psychological explanation for the effects of functional specialty on responses.

Summary and Integration

The conceptual network is outlined in Figure 1. The figure summarizes the network of relationships that have been considered in the discussion of functional specialty, a concept of technological complexity of the operations that are performed in functional divisions of organizations. Functional subdivisions or specialties are subsystems of organizations assigned particular

tasks, all of which are necessary for the total organization to function (Katz & Kahn, 1978). Depending on the nature of the tasks, different procedures and processes are required by these units to achieve the goals set for them. One central attribute of the processes used is the level of technological complexity. This concept, which is often used in the sociological literature on structure and technology, has found limited usage among those interested in behavior in organizations.

Insert Figure 1 about here

One accepted conceptualization, technological complexity, is defined here as the extent of mechanization and complexity of equipment that is used in performing the unit function. Technological complexity can influence the nature of the work available and thus the levels of perceived job characteristics experienced by members. Job characteristics, in turn, provide the primary set of stimuli used by members in formulating their affective responses to the work and work environment. Thus a relative simple and parsimonious explanatory network can accommodate the observed relationships among the constructs reviewed.

It can be argued that functional specialties, having associated with them varying levels of technological complexity, influence responses primarily through the nature of the jobs within them. Complex technologies require more unique job types, more jobs that demand high skill levels, and more jobs that provide growth opportunities and "enriched work" than simple technologies. The nature of the jobs within units should reflect these technological differences. The strongest impact of technology and job characteristics on responses should be seen with satisfaction with work

itself and internal work motivation, both responses aroused by job complexity. Other satisfaction dimensions, however, may be expected to be influenced by these characteristics of units as well.

It must of course be acknowledged that a given functional specialty may carry out its tasks through a variety of techniques. Automobiles, for example, may be assembled using a variety of production methods that vary greatly in technological complexity, although production departments may all represent the same functional specialty (Form, 1972). Organizations having a particular technology of operations usually contain functions that differ in their closeness to the operations and control through put processes. In such cases it is likely that both level of technological complexity of the organizations process and nature of the functions within the organization will influence job characteristics and members' responses to their work and work environment.

Where clear technological variation exists at the organizational level, we can use this information to examine the degree to which organizational technology, and functional specialty independently and in interaction influence job characteristics and thus responses.

Two related questions are addressed in the study:

1) Are the effects of functional specialty on affective responses mediated by technology and job characteristics?
2) Can functional specialty and organizational technological complexity independently influence job characteristics and responses when organizations containing a common set of functions vary in overall technological complexity?

Method

Research Setting

The investigation reported here is part of a major field study of 31 selected units of the Illinois National Guard and three bases of the Illinois Air National Guard. The Illinois Army National Guard includes 90 units in 45 locations throughout the state. The Army Guard units were selected to represent a wide range of functions with a minimum of two units representing each of eight selected functional specialties. Within each Air Guard base, members were selected for the study based on their job classification. Members were selected in order to represent most of the major activities of the base. The author was able to obtain data from both Army and Air units because of a deep concern over retention problems following the elimination of the military draft.

The primary source of data for the study is a questionnaire completed by Guardsmen in the selected units. The questionnaire was prepared by the author after considerable pilot work using data from two previous studies of other units in the same organization. From this earlier work, it was apparent that, despite their part-time organizational status, Guardsmen could describe and evaluate their work and environments with considerable reliability.

Two versions of the questionnaire were prepared, each reflecting the particular terminology and organizational structure of the branches involved. For example, all references made to the Company Commander for the Army version were changed to refer to the O.I.C. (Officer in Charge) for the Air Guard. Similarly, references to the First Sergeant in the Army Guard were changed to refer to the N.C.O.I.C. (Non-commissioned Officer in Charge) for the Air Guard.

Administration of the survey to members of the selected units was arranged and conducted by the author and several graduate assistants at each of the armories on a weekend drill period.[3] Data collection for both Army and Air Guard required 3 months to complete.

Because Guardsmen are involved with the organization for only 12 weekends and one Annual Training Period per year, a considerable amount of flexibility was required in making arrangements for data collection. The survey in most cases required adjustment of tight training schedules and re-arrangement of work assignments to allow for maximum participation.

Surveys were generally administered in groups of 10 to 30 persons in classroom settings. However, severe space and physical facility problems frequently required departure from this standard procedure. These exceptions ranged from use of an indoor polo field to the back of transport vehicles.

Sample

The samples for this dissertation consist of 1000 Army National Guardsmen and 623 Air National Guardsmen. These samples represent all enlisted personnel who could be released for survey administration at the scheduled periods. In general, only a few members were unable to attend the sessions, usually because of pressing job duties (i.e., cooks, clerks, etc.). In the Army Guard most units ceased other activities in order to allow maximum participation in the study. In the Air Guard, where missions continued throughout the drill weekends, members were released from job duties in rotation, each section allowing three or four members to attend each survey session. At minimum, two days were required for survey administration at each Air Guard location. The Army Guard units were generally surveyed in two or three one-hour sessions.

Sample characteristics are provided separately for Army and Air Guard samples because separate analyses are required for the two data sets. Army Guardsmen range in age from 17 to 58 years, with a median age of 27 years. Ninety six percent of Army Guardsmen in the sample are males and 64% are married. The majority of Army Guardsmen identified themselves as Caucasian (78%). Twenty one percent report they are currently students. Education level is quite high, 82% having at least a high school diploma and 35% having at least 2 years of college. In order to obtain reenlistment data on the subjects, social security numbers were requested. Ninety four percent provided this information. Confidentiality was assured in the administration and great care has been taken to follow that principle.

In the Air Guard, members range in age from 17 to 59 years with a median age of 28 years. Ninety one percent of the Air Guardsmen surveyed are males and 66% are married. Eighty seven percent of the sample classify themselves as Caucasian. Students make up 25% of the Air Guard sample and 97% report having at least a high school diploma. Over 60% have attended college. The response rate for providing social security numbers for follow-up was 91%.

As a check on data quality, all questionnaires were screened for excessive missing data. Any questionnaire having more than 1/3 of its pages blank was eliminated. Of 1000 questionnaires for Army Guardsmen, 90 were eliminated on this basis. For the Air Guard, only 15 questionnaires were eliminated due to missing data, leaving 608 usable questionnaires. The samples were also reduced slightly through elimination of 30 Air Guardsmen who are members of a unit that was not an integral part of the base, and of 50 Army Guardsmen who were members of units not included in the eight

functions. The resulting samples available for hypothesis testing includes 860 Army Guardsmen and 578 Air Guardsmen.

Instruments

The questionnaire constructed for administration to subjects in both samples contained a common core of content for use in this study. These items and scales are described below.

The Job Characteristic Inventory (Sims, Szilagyi, and Keller, 1976) was used to assess perceptions of job characteristics. This instrument, based on Hackman and Lawler's (1971) measure, contains 30 items measuring six dimensions of job characteristics:

Variety - the degree to which a job requires one to perform a wide range of operations and activities in the work, and/or the degree to which one must use a variety of equipment and procedures in the job.

Autonomy - the extent to which one has a say in scheduling work, selecting equipment to be used, and deciding the procedures to be followed.

Feedback - the degree to which one receives information while working that reveals how well s/he is performing on the job.

Task Identity - the extent to which one does a whole piece of work and can clearly identify the results of his/her efforts.

Dealing with Others - the degree to which a job requires one to deal with other people to complete the work.

Friendship Opportunities - the degree to which the job allows one to talk with others on the job and establish informal relationships at work.

The six scales possessed high internal consistency but have a less complex factor structure in this sample than what Sims et al. (1976) report.

In addition to these incumbent ratings of job characteristics, ratings of the two most frequent job classifications in each unit were obtained from supervisors. These ratings were used to examine the convergent validity of the JCI scales.

Satisfaction with work, co-workers, OIC/Company Commander, NCOIC/First Sergeant, and promotion opportunities were measured by the Job Descriptive Index (JDI) developed by Smith, Kendall, and Hulin (1969). Extensive validation work and considerable research make this a reasonable choice. for the measurement of facet satisfaction. General satisfaction was measured using a 7-point version of the G-M Faces Scale (Kunin, 1955). Satisfaction with pay was measured by six items adapted from the Index of Organizational Reactions (IOR) reported by Dunham, Smith, & Blackburn (1977). These items were used instead of the JDI pay satisfaction scale because several adjectives used in the latter measure were found to be inappropriate for part-time National Guard membership.

Internal work motivation was assessed using the three-item version of the Hackman and Lawler (1971) scale. Subjects responded to the statements on a five-point, Likert-type scale.

Behavioral intention to re-enlist was measured using one item that asked for the likelihood of re-enlisting in the Guard when one's current enlistment was completed. Responses were made on a seven-point scale ranging from Very Unlikely to Very Likely.

As a method check at the individual level to our measures of technological complexity, a five-item scale was constructed to measure the extent to which complex machinery, expensive equipment and parts were used in the jobs. Subjects responded to these items on five-point scales ranging from Very Little to Very Much.

Measures of Technological Complexity

In order to develop a set of variables that represent important aspects of technological complexity of units, information was obtained from both unit leaders and organizational records on number and nature of positions in each unit of the Army Guard and the number of types of job classifications assigned to the unit. In nearly every case, the two sources of information yielded identical information. Indices of differentiation representing the relative distribution of jobs, classifications, and positions within sections in each unit were then computed from the obtained information using the Gibbs and Martin (1962) "D".

Unit equipment inventory value was obtained from organizational records and used to construct an index of capital intensity representing the degree to which equipment and machinery were used in the unit. A summary index of dollar value of equipment on hand divided by unit size was computed as a measure of this aspect of technology.

Unit level data comparable to that obtained on the Army Guard were not available from the Air Guard. Discussion with State Headquarters officers, however, made it clear that the three bases vary considerably on technological complexity. It was clear from visits to the three bases that operations at Base S were far more complex than at either Base C or P. Further, the aircraft assigned to the three bases were clearly ordered along a dimension of technological complexity. Base S was assigned sophisticated jet fighter aircraft. Base P, on the other end of the dimension, was assigned small propeller driven aircraft. Base C, between the other bases on this dimension, was assigned older jet powered, refueling aircraft.

Based on these qualitative factors, the decision was made to consider the bases as representing three levels of aircraft technology, with each

base having two functional groups: Maintenance and Support Services. Thus technology is crossed with function in a 3 x 2 design in which independent effects can be evaluated.

Analyses

In order to examine the major scales used in this dissertation, reliability estimates (coefficient α) were estimated, and scale intercorrelations were computed.

In addition, the convergence of the six JCI scales were examined. In the analysis of this instrument, means on each of six job characteristics were computed for 15 job classifications in the Army Guard and 12 job classifications in the Air Guard. Means obtained from job incumbents were then correlated with means from supervisory raters across job classifications.

Research Question One. In order to address the first research question, a series of analyses were conducted that examined the following:

1) Army functional group differences in technology and mechanization.
2) Army functional group differences in job characteristics.
3) Army functional group differences in responses.
4) The mediating role of technology and job characteristics in the relationship between Army functional specialty and responses.

The mechanization scale was used in a method check of perceived mechanization among functional groups. Mean differences were examined in a one-way ANOVA. In addition, Army functional groups were contrasted on technological indices derived from unit level information. Another analysis was conducted to evaluate the group differences in perceived job characteristics and affective responses. Multivariate analysis of variance (Finn, 1976), and follow-up univariate tests and discriminant function analyses were used to test for significant group differences and examine the nature of any signifi-

cant differences in job characteristics and responses. Estimates of the magnitude of multivariate effects were made using the multivariate extension of Hays' ω^2 (Tatsuoka, 1970).

In order to insure that the observed group differences were not due to differences in background characteristics of group members (Herman, Dunham, & Hulin, 1975), the multivariate analyses of affective responses were repeated using residualized responses, removing the variance predictable from demographic variables.

Finally, the degree to which function influences affective responses through the mediating variables of technology and job characteristics was evaluated. The strongest relationships were expected for variables most directly task related: Work Satisfaction and Internal Work Motivation. To test this network, hierarchical regression analyses were performed. The rationale for these analyses is simple. If variable A influences C through a mediating variable B, we should find: (1) a strong relationship between C and B, and (2) the relationship between A and C, removing the effects of B, should be near zero. The hierarchical regression procedure allows the evaluation of the semi-partial correlations of both independent and mediating variables with a criterion, controlling the effects of each other (Cohen & Cohen, 1975). Thus the hypothesis is supported if the semi-partial multiple correlation between function and response (such as work satisfaction) is near zero when job characteristics and technology are removed. Adding dummy coded functional group membership as a variable set to job characteristics in the regression should then result in only small increases in R^2 in the prediction of work related criteria.

Research Question Two. The second research was also addressed through a series of analyses of the Air Guard data that examined the following:

1) Base technology differences in mechanization.

2) Base technology and functional specialty differences in job characteristics.

3) Base technology and functional specialty differences in responses.

4) The mediating role of job characteristics in the relationship between base and functional group membership and responses.

The mechanization scale was again used as a method check of base differences in technological complexity as perceived by members. An ANOVA was computed to test for the presence of mean differences. The effects of base technology and subunit functional specialty on job characteristics and responses were examined in a 3 x 2 MANOVA on each set of dependent variables. Univariate tests and discriminant function analyses were used to examine the nature of the significant effects. The mediating role of job characteristics was again evaluated by hierarchical regression analysis.

A Note on Missing Data

The sample sizes for analyses varies slightly as a result of the elimination of only subjects with missing data on variables included in particular analyses. Subjects having missing data on the major variables were found to show no significant differences from those having complete data on age, tenure, marital status, pay grade, sex, or ethnicity. No obvious biases are thus introduced by this procedure of dealing with missing data.

Results

Scale Characteristics

Descriptive statistics for the major variables that were assessed by questionnaire appear in Table 1 for Army and Air Guard samples. Internal consistency estimates are also presented in Table 1 for all measures.

Intercorrelations among these variables are presented in Table 2. Correlations based on the Air Guard appear above the diagonal and those for the Army Guard appear below the diagonal. All measures possessed adequate reliability and were related to each other as expected.

Insert Tables 1 and 2 about here

Convergence of Ratings of Job Characteristics. The convergence of ratings on the JDI scales were evaluated by computing the correlations of job means obtained from incumbents with job means obtained from supervisors for each of the six job characteristics scales. A total of 27 jobs had three or more supervisory ratings available and only these were included in the analysis. The correlations between incumbent and supervisory ratings are presented in Table 3. Two of the correlations were significant and the remainder were uniformly positive and small. Autonomy and feedback were the only scales for which the means were significantly related. Dealing with others and friendship opportunities also showed small although non-significant levels of agreement. These data give little evidence for convergence of the supervisory and incumbent supplied ratings of job characteristics. Higher levels of convergence would, of course, be desirable. But these results do not necessarily implicate the incumbent ratings as being invalid. It may be that the supervisory ratings obtained for the jobs in

these samples are inadequate. One-way ANOVAs were computed on the jobs classifications from each sample using both the supervisory ratings and incumbent ratings as dependent variables in a basic test of the adequacy of these ratings to discriminate among job types. Because several supervisors provided ratings for two jobs the use of both ratings would complicate the analysis with nonindependent observations, a decision was made to sacrifice some information in order to maintain independence of observations in this ANOVA design. For those supervisors who rated two jobs, one set of job ratings were randomly eliminated and the remaining one used to test for job differences. Only job incumbents in the same job classifications for which supervisory ratings were obtained were used in the ANOVAs on incumbent job characteristic ratings. If the results are such that either supervisory or incumbent raters show no significant differences in their descriptions among job classifications, it is likely that the poor convergence resulted from problems in one or both of these ratings. Analyses for both samples failed to yield significant F ratios for any of the six job characteristics subscales that would indicate job differences among supervisory ratings. On the other hand, incumbent ratings showed significant differences in ratings among job classifications in both samples. Thus, the supervisory means used in the test of convergence are probably not a justifiable criterion against which the validity of incumbent ratings can be evaluated. It appears that ratings obtained from supervisors in these samples do not have discriminant validity themselves, since they do not produce any significant differences among job classifications. We are left to rely upon the evidence for validity presented by the scale developers (Sims, et al., 1975) and the evidence for construct validity provided in results that follow.

Insert table 3 about here

Relationship of Job Characteristics and Response

A crucial relationship in the network of variables explored in this study is that of job characteristics and responses. Strong and consistent relationships between these variable sets is a necessary condition to evaluation of the research questions posed in the introduction. This relationship was evaluated by regression analyses in both Army and Air Guard samples. The degree of multicollinearity among the job characteristic measures, however, makes the use of Beta weights to evaluate the contribution of each dimension to the prediction of responses very misleading (Darlington, 1968). Instead, the zero order correlations are used to evaluate which job characteristics are most related to a particular response measure. This has one advantage over the use of structure coefficients (which are always proportional to the zero order correlations) in that standard tests of significance can be applied.

The results of the regression of each of nine responses on job characteristics for the Army sample are shown in Table 4. Comparable results for the Air Guard sample appear in Table 5. Expected consistencies are evident from these results. First, work satisfaction shows the strongest relationship tc job characteristics in both samples, with job characteristics accounting for 41% of the variance in work satisfaction in the Army Guard and 45% of the variance in work satisfaction in the Air Guard. Second, the other response expected to be strongly related to job characteristics, internal work motivation, also has a consistent substantial relationship in both samples, with 21% of the variance accounted for in the Army Guard and 20% of the variance accounted for in the Air Guard sample. General satisfaction, which may be influenced by many aspects of the person and organization in addition to task attributes was also strongly related to task characteristics in both samples. Thirty two percent of the variance in general satis-

faction is accounted for by job characteristics in the Army Guard and 27% of the variance is accounted for in the Air Guard.

Insert Tables 4 and 5 about here

Smaller relationships are found between task characteristics and responses that are not, presumably, directly influenced by the nature of the work itself. Pay, Promotion, and co-worker satisfaction had small but significant relationships with job characteristics in both samples. This differential pattern of relationships offers evidence to suggest that the observed relationships reflect something other than common method variance or a common "G" affect factor.

An interesting exception to the consistency across samples is seen in the multiple correlations resulting from the prediction of NCOIC and OIC satisfaction. In the Army Guard, job characteristics appear to be more closely predictive of OIC satisfaction, while in the Air Guard NCOIC satisfaction has the stronger relationship. In both samples, the largest zero order correlation indicating relative contribution to the equation is feedback. This suggests that for members of the Army Guard, the amount of feedback received influences satisfaction with the Commander but not the First Sergeant. In the Air Guard the opposite is the case, with the amount of feedback influencing NCOIC satisfaction. This result probably reflects structural arrangement of the two organizations. In the Army Guard, the OIC (Company Commander) is the key person in the unit, with the First Sergeant acting as his spokesman to the company. In the Air Guard the structural arrangements are different, the NCOIC having a very direct role in planning, organizing, and directing the members and the OIC functioning more as an upper level administrator. Thus these results may reflect differences in who gives the feedback about job activities and in who has the most direct role in getting the work done.

With the exception of these relationships between leader satisfaction and job characteristics, the patterns of zero order correlation, which are proportional to the relative contribution of each job characteristic to the prediction of each response, are remarkably similar across the two samples. Variety is strongly related to work satisfaction, internal work motivation, and general satisfaction in both samples. Autonomy and feedback are also strongly related to work satisfaction in both samples. Dealing with others is most strongly correlated with general satisfaction, and task identity is more strongly related to work satisfaction than any other response. Friendship opportunities are most strongly related to general satisfaction in both samples.

Research Question One

Mechanization group differences. As a method check on the assumption that functions have associated with them a characteristic level of technological complexity, the individual level measure of mechanization was used in a one-way analysis of variance on the groups representing the Army function.

Means, standard deviations and overall F ratios for the one-way ANOVA for the eight Army functions are presented in Table 6. Army function had a significant effect on reported levels of mechanization ($F_{(7, 772)} = 18.48$, $p < .01$). Again, the interpretation is clear. Aviation is nearly one standard deviation above the remaining functions on mechanization. Infantry and police and medical functions have the lowest levels. Maintenance, engineering, transportation, and artillery are somewhat higher on this measure. Although no specific prediction was made regarding the precise ordering of the groups along this measure, it was expected that major differences would emerge and these would be interpretable. Such was the case with these results.

Insert Table 6 about here

Army Guard function MANOVA and discriminant function analysis on affective responses. An eight group one-way MANOVA was used to test the hypothesis of group differences in mean response vectors. The raw group means on affective responses appear in Table 7. The multivariate effect was significant: $F(63, 3802) = 5.10$, $p < .01$. The univariate analyses indicated the presence of group differences for each of the nine response measures. In order to interpret these group differences, an eight-group discriminant function analysis was computed.

Insert Table 7 about here

Seven discriminant functions resulted from the analyses, yielding a level of total discriminatory power of 36%. Three functions were significant and these accounted for 93% of the discriminable variance. These functions and their corresponding structure coefficients and eigenvalues appear in Table 8. Using the structure coefficients to interpret the nature of the functions, it appears that the first function was characterized primarily by work satisfaction and re-enlistment intentions. Somewhat smaller contributions were made by OIC satisfaction, general satisfaction, pay satisfaction, and internal work motivation. The second function is almost exclusively defined by NCOIC satisfaction and pay satisfaction. The third significant function appears to represent group differences in promotion satisfaction and general satisfaction.

Insert Table 8 about here

Group means on the significant functions are presented in Table 9. The first function characterized primarily by work satisfaction and re-enlistment intentions separates aviation at the high end from artillery at the low end. Maintenance, medical, and transportation groups are in the upper half of this function although below aviation. Police, engineering, and infantry fall in the lower half although above artillery.

Insert Table 9 about here

The second function, representing pay and NCOIC satisfaction orders the group in a different way. Maintenance, medical, transportation, and infantry have the highest means on this function and police and engineering are somewhat lower. Aviation and artillery, the groups most distant on the first function, both fall at the low end of the second function.

The third function, representing group differences in promotion satisfaction, and general satisfaction, separates medical and transportation at the high end from maintenance at the low end with the remaining groups clustered in the middle range of this function.

The analysis using the residuals with demographic variance removed from responses resulted in nearly identical results. Again, only slight reduction in discriminatory power resulted (.34).

In summary, these results support the hypothesis of significant differences between functions on affective responses. The first (and largest in terms of variance accounted for) function separates the functional groups in a manner expected by this relative technological complexity with only a few exceptions. Aviation, being the most complex was clearly above the other groups on this primary dimension, and other relatively complex functions,

Maintenance, medical, and transportation, fell in the upper half of the dimension. The other two significant functions, while accounting for some group differences, appear to reference response differences that do not have a clear technological or work-related basis.

Army Guard function MANOVA and discriminant function analysis on job characteristics. A one-way, eight group MANOVA using the six measures of job characteristics produced a significant multivariate effect: multivariate F (42, 3887) = 3.51, $p < .01$. Raw group means on the measures appear in Table 10. The univariate tests produced significant group differences on five of the six job characteristics measures. Only dealing with others failed to produce a significant F ratio.

Insert Table 10 about here

An eight group discriminant function analysis using the six job characteristics measures as dependent variables was computed to examine the nature of the significant group differences. Six discriminant functions were produced accounting for a total discriminatory power of 15%. Three significant functions accounted for 90% of this discriminable variance. These significant functions, their corresponding structure coefficients and eigenvalues appear in Table 11. Again the structure coefficients are used to interpret the functions. The first function is characterized by friendship opportunities, autonomy, and task identity, in an inverse direction. The second function represents group differences in variety, feedback, and friendship opportunities (inversely). The third function is characterized by dealing with others and task identity in an inverse direction.

Insert Table 11 about here

Group means on the significant functions appear in Table 12. The first dimension separates aviation, medical, transportation, and maintenance groups from artillery, police, and engineering. Infantry falls near the mid-point between these clusters. The separation of groups on this function parallels the ordering of these groups on the first function in the analysis of affective responses.

Insert Table 12 about here

The second function, representing differences in variety and feedback, separates the groups differently. Police and maintenance report the lowest levels of variety and feedback, infantry falls somewhat higher, and the remaining functions show higher levels of these job characteristics.

The third function, which accounts for a small portion of the discrimination, separates groups on extent of dealing with others. On this dimension, maintenance was clearly lowest, aviation, police, and infantry were highest, and other groups were between these.

In summary, the analyses on job characteristics indicate that the second hypothesis is supported in the Army Guard data. Further, the ordering of functional groups on the primary discriminant function again is, with few exceptions, as was expected on the basis of technological complexity. While similar results were obtained for both affective responses and job characteristics, the discriminatory power achieved for job characteristics was much smaller than expected. The smaller ω^2 for job characteristics puts a restriction on the amount of response variance that can be accounted for by function through the effects of job characteristics. The effects are, however, strong enough to allow a test of the major hypothesis of this dissertation.

Tests of function, technology, job characteristics, and responses. Finally, the model is evaluated using the hierarchical regression methodology. The results of this analysis are presented in Table 13. This test of the mediating effects of job characteristics and technology was made using both proposed mediators simultaneously. The hypothesis is supported if the inclusion of function results in no increase in R^2 over that achieved by the mediating variables alone. In addition, there must be some portion of response variance jointly predicted by both function and mediator variables.

Insert Table 13 about here

The results reveal significant increases in R^2 for five of the nine response measures. The largest semi-partial multiple correlations were obtained for NCOIC satisfaction, pay satisfaction, and OIC satisfaction. The smallest increases were found for co-worker satisfaction, work satisfaction, internal work motivation, and re-enlistment intentions. Both of the primary work related responses show no significant relationships with function independent of the intervening variables.

Research Question Two

Mechanization--group differences. As a method check on the classification of bases by technological complexity, an ANOVA was computed on the six base x function groups. Means, standard deviations, and the overall F ratio for this analysis are presented in Table 14. A significant effect for base x function groups on technological complexity is measured by perceived mechanization. The interpretation is clear from the order of the means. The highest level of mechanization is reported for Base S, Base C is intermediate, and Base P is lowest on mechanization for

both functional groups. Thus, the level of base technology appears to be perceived by members in the expected way.

Insert Table 14 about here

Air Guard base x function MANOVA and discriminant function analysis on affective responses. The Air Guard sample was partitioned into six groups corresponding to the cells in a 3 x 2 design. Level of technology, represented by the three bases, was crossed with two functional groups, maintenance and support services. The nine response measures were used as dependent variables. The cell Ns and raw means on the nine measures appear in Table 15. The main effect for function was significant: multivariate F (9, 505) = 13.73, $p < .01$. Pay satisfaction, NCOIC satisfaction, and general satisfaction failed to produce significant F ratios.

Insert Table 15 about here

The main effect for base technology was also significant: multivariate $F(18, 1010) = 4.73$, $p < .01$. Seven of the nine univariate tests produced significant F ratios. Promotion and NCOIC satisfaction were not significantly different across base technologies.

The Function x Base interaction was also significant: multivariate $F(18, 1010) = 2.41$, $p < .01$. Of the nine univariate tests of interactions, three produced significant F ratios. Satisfaction with work, NCOIC satisfaction, and OIC satisfaction all produced significant F ratios for the interaction of Base x Function.

As an aid in interpreting the results of the Base X Function MANOVA, a six group discriminant function analysis was computed. Five discriminant functions resulted and three functions were significant ($p < .01$). Table 16 presents the significant functions, their eigenvalues, and structure coefficients which are zero order correlations of the dependent variables with the linear composite defined by the discriminant functions. The five functions achieved a total discriminatory power (Tatsuoka, 1970) of 36%, meaning that 36% of the variance in responses is accounted for by group differences. The three significant functions accounted for 92% of the discriminable variance in responses, and only these are interpreted. Using the structure coefficients as basis of interpretation of nature of the composites, the first function taps group differences in primarily OIC satisfaction. Work satisfaction, internal work motivation, and co-workers satisfaction are also part of the first function, however, in the opposite direction of OIC satisfaction. The second function represents group differences on all responses except Promotion satisfaction and NCOIC satisfaction. The third significant function represents group differences in NCOIC, pay, and promotion satisfaction. Group means on the significant functions appear in Table 17.

Insert Tables 16 and 17 about here

Inspection of the means on the first function indicates clear separation of maintenance and support services. The Guardsmen in maintenance functions express lower satisfaction with their officers, but more satisfaction with work and co-workers, and higher levels of internal work motivation than members of support functions. The differences among groups on this function are, for the most part, congruent with our expectations.

The second function clearly separates the units of the three bases in the predicted direction. This function, which summarizes a wide range of response variation (all measures except pay satisfaction and NCOIC satisfaction have large structure coefficients), reflects multiple aspects of members' reactions to their experience in the Guard. As hypothesized, members of Base S, which has the highest level of technological complexity, express the most favorable attitudes and responses regardless of functional subdivision. Members of Base C are in the mid-range of this function and those of Base P, representing the lowest level of technological complexity are at the low end of the function, expressing less favorable responses than others.

These results give a clear interpretation to the results of the MANOVA and provide support for the first hypothesis. Clear effects for both base technology and function within base on responses were evident. Because the range of technology was substantial, independent effects of both technology and function can be evaluated. The same analysis on residualized affective response scores with the effects of demographics removed resulted in nearly identical results with only a slight reduction in total discriminatory power (32%). The observed effects are independent of individual characteristics on which group composition may vary.

Air Guard base x function MANOVA and discriminant function analysis on job characteristics. The independent effects of function and base technology on the hypothesized mediating variable set, job characteristics, were examined using a 3 x 2, base x function, MANOVA design. The group means for the six groups on the measures of job characteristics appear in Table 18. The MANOVA produced

a significant main effect for function: multivariate $F(6, 555) = 9.02$, $p < .01$. However, only one of the univariate effects for the function main effect was significant. Variety produced the only significant F ratio ($F = 23.82$, $df = 1,560$, $p < .01$). The F ratios for autonomy, feedback, and dealing with others, while not significant at the $p < .01$ level, were suggestive for main effects for function.

The main effect for base technology was also significant: multivariate $F(12, 1110) = 3.34$, $p < .01$. The univariate tests produced two significant F ratios: feedback, $F(2, 560) = 9.12$, $p < .01$; and friendship opportunities, $F(2, 560) = 10.93$, $p < .01$. Autonomy and task identity produced F ratios that were suggestive but which failed to reach the .01 level of confidence.

Insert Table 18 about here

The test of the interaction produced no evidence for an interaction between base and function: multivariate $F(12, 1110) = 1.45$, NS. Only one univariate test of the interaction was significant. Variety produced a significant F ratio ($F(2, 560) = 4.94$, $p < .01$), but given the absence of an overall multivariate interaction, this may not be a result in which much confidence can be placed.

A six group discriminant function analysis was computed in order to interpret the significant effects obtained from the MANOVA. Five discriminant functions were produced, two of which were significant ($p < .01$). The significant discriminant functions, their structure coefficients, eigenvalues, and proportions of variation are presented in Table 19.

Insert Table 19 about here

Total discriminatory power of the five functions was 18%. The two significant functions accounted for 85% of this discriminable variance. From the relative magnitude of the structure coefficients, it appears that the first function is most clearly defined by variety in an inverse relationship. Low scores on the function are characterized by high variety. The second function represents group differences in friendship opportunities, feedback and autonomy, all in a positive direction. Group means on discriminant functions are presented in Table 20.

Insert Table 20 about here

The first function, representing group differences in task variety, clearly separates the two functions regardless of base technology. All maintenance functional groups report higher levels of variety than support functions. The unambiguous separation of functional groups on variety is consistent with the effects seen in the MANOVA.

The second function, separates the three bases regardless of function. As was the case in the results of the analysis on affective responses, Base S groups are clearly separated from the other bases. Members of Base S report greater friendship opportunities, more autonomy, and more feedback than do members of the other bases. However, unlike the analysis of affective responses, the ordering of the three bases was not consistent with their technological level. Base C and P group means are reversed in order although they remain in a very tight cluster on the second function. Base C and P are clearly different from Base S in levels of friendship opportunities, autonomy, and feedback.

Test of mediating relationships. The data from the Air Guard allow the examination of only part of the proposed network because of the unavailability of comparable measures of technology. The Air Guard hierarchical regression analysis using functional groups and job characteristics are presented in Table 21. Using functional group member (dummy-coded) to predict responses, seven of nine multiple correlations were significant. Only promotion satisfaction and NCOIC satisfaction were not significantly related to function. The largest multiple correlations were obtained for OIC satisfaction (R=.39), and the smallest significant correlation was obtained for internal work motivation (R=.22). The remaining multiple correlations, while significant, are small. The regression of responses on job characteristics for the Air Guard were reported earlier and need no further discussion. The combined predictor sets result in significant multiple correlations for all nine criteria. Work satisfaction had the highest multiple correlation of the criteria, producing a multiple correlation of .68.

Insert Table 21 about here

The test of the mediating role of job characteristics was tested by evaluation of the changes in R^2 produced by inclusion of function with job characteristics in the predictor set. The results were very similar to those obtained from Army Guard data. All but two of the semi-partial multiple correlations were significant. Only NCOIC satisfaction and internal work motivation had no relationship with function when the effects of job characteristics were removed. NCOIC, however, was not significantly related to function in the first place. The remaining criteria show modest relationships

with function, controlling job characteristics. These results like those from the Army Guard do not provide strong support for the hypothesis in the strong form. The relative changes in $\underline{R}^2$ of the task related responses, however, were smaller than most others, and one, internal work motivation, was nonsignificant. This pattern offers a weaker form of support for the hypothesis of the mediating role of job characteristics.

The results of the hierarchical regression analyses provide some support for the hypothesis that the effects of function on responses is mediated through both technology and job characteristics. Generally, however, responses were related to function with the hypothesized mediating variables controlled, indicating that a portion of the effect is independent of technology and job characteristics. Of the key work related responses, approximately 50% of the variance predictable from function is mediated by job characteristics and technology. Considerably less variance is accounted for by these variables of the remaining responses.

Thus while we can find no strong support, evidence is consistent with a weaker form of the hypothesis. Job characteristics do mediate some of the relationship between function and responses. Other variables must be explored to uncover how the remaining variance is affected.

Discussion

Although a considerable amount of research has been directed toward demonstrating that organizational environments influence perceptions, attitudes and behaviors of members, progress in the formulation of theoretical models that explain these effects have remained, for the most part, speculative. This study explored the tenability of an explanatory model that was based on the theoretical and empirically demonstrated relationships among function specialty, technology, job characteristics, and responses. Specifically, this study examined the hypothesis that functional specialties, having particular levels of technological complexity, represent clusters of tasks with some similar characteristics, and these task characteristics, in turn, influence the responses of members. In addition, the effects of technological complexity, independent of function, were examined in the case in which similar functional subunits were determined to have different levels of technological complexity.

Units representing a wide range of functional specialties in the Army Guard were chosen to test the first question. The two or more units representing each function were homogeneous on the four technological indices, all units of a given function having remarkable similarity on measures of differentiation and mechanization. All infantry units, for example, used basically the same equipment, did the same tasks, and were assigned the same responsibilities.

The three units of the Air Guard were used to address the second question of the independent and joint effects of technology and functional specialty on members' responses. The three self-sufficient bases, representing three distinct levels of technological complexity, contained the same functional specialties that were responsible for various aspects of the mission, regardless of its complexity. The evaluation of different but overlapping questions in these two samples allows a greater degree of generalization and a higher level of

confidence that the observed effects and relationships are not spurious. It also allows us to consider the research problem in a way that reflects the real complexity of organizations and their technologies. We must acknowledge that there are multiple ways of accomplishing the same task and the technologies used may vary greatly among similar organizations.

The results of this study showed that functional specialty was related to both job characteristics and affective responses. These results are consistent with previous work (Adams, Laker, & Hulin, 1977; Herman, Dunham, & Hulin, 1975; Hulin, Hom, & Herman, 1976; Herman & Hulin, 1972; Newman, 1975), and support the hypothesis that Army Guard functional specialty groups would differ on their perceptions and responses. Despite the fact that these groups included members from different units under different commanders, and from different areas of the state, this nominal variable was able to account for a substantial portion of variance in affective responses (ω^2 = .36). In the Air Guard analysis, functional groups representing a crude maintenance versus support partition of members, nested in base technology also accounted for a large portion of variance in responses (ω^2 = .36). In both samples, work satisfaction and internal work motivation contributed to the discrimination among and between functional groups.

These results are very encouraging when considered in view of the fact that most of the members in these samples are involved with the organization, and thus directly influenced by it, only on a part-time basis (approximately 16 hours per week). It can be reasonably expected that such a low level of involvement would minimize the impact of organizational characteristics on members simply because of the short influence between member and organization and thus show the signs of partial inclusion (Katz & Kahn, 1978). Clearly, this is not the case with these organizational members. Despite their limited

contact with the organizations and despite the heterogeneity of units within functions, members show differential responses as a result of functional group membership.

Perhaps the strength of these effects results from the "total institutional" (Goffman, 1961) nature of the military that is, in this case, powerful enough to compensate for the opposite effects of partial inclusion. The Guard may be a curious blend of both totally institutionalized yet partially included individuals that must be able to "be military" only occasionally. This may be strongly influenced by the military environment only during the drill periods.

Functional specialties were also found to be related to perceptions of job characteristics. The magnitude of this relationship was less than had been expected, however. Functional specialties within base technologies accounted for 15% of the variance in job characteristics in the Air Guard sample. Army functional specialty was able to account for 18% of the variance in job characteristics. Although smaller than expected, these relationships are similar to results presented by Rousseau (1977) in which a three level technological classification was able to account for substantial amounts of variance in perceptions of job characteristics. The presence of significant effects of functional specialty on job characteristics as well as responses made it possible to investigate the mediating role of job characteristics in the model. It must be noted, however, that the magnitude of these effects place a ceiling on the sufficiency of these mediating effects.

It is noteworthy that in the Air Guard MANOVA's both main effects were significant. Both functional specialty (maintenance versus support) and unit technology were related to perceived job characteristics and affective responses. As hypothesized, members of maintenance functions reported higher

levels of work satisfaction, internal work motivation, and general satisfaction. But they also were found to report dramatically lower levels of OIC satisfaction than their support services counterparts. This one striking exception to the overall pattern of the functional group differences was unexpected. One explanation for this effect may be found in nature of the work requirements for the two functions. There exists in all three Air Guard bases strong emphasis on keeping the aircraft in flight-ready condition. Those directly involved with that task form the maintenance function and the OIC of maintenance is responsible for maintaining readiness. Faced with the necessity of maintaining many aircraft with resource limitations, the maintenance OIC and the section OIC's may find it necessary to use their authority and to press maintenance personnel to get the work done. In support services, on the other hand, the pressure to get the work completed is far less severe because of the less critical nature of the work done there. Failure to file a personnel record in time does not have the same possible consequences as does holding up a flying mission because a maintenance crewman took his time in inflating a tire or calibrating an instrument. Such supervisory differences may require exploration in future research on organizational influences on responses.

The main effect of base technology on responses was also significant as expected. Moreover, functions within the three bases were clearly ordered by base technology in the hypothesized direction. The high-technology, fighter base (Base S) had the highest mean levels of most responses overall. Base P, having less sophisticated aircraft had the lowest mean levels on most responses. Intermediate levels were observed for Base C, consistent with its technological level. Thus regardless of what function one works in, the base environment, including the technological level of its equipment appears to influence responses.

Such statements must be tempered, of course, with a word of caution. It is possible that other differences among the bases may account for these effects. The present design cannot eliminate that possibility. We can state, however, that the explanation chosen here has a theoretical basis and the data are consistent with its propositions. The nature of the organization does not allow for independent examination of competing explanations in this case.

Job characteristics and affective responses were strongly related in this study. For the two responses of particular interest, work satisfaction and internal work motivation, substantial portions of variance were accounted for by job characteristics. Over 40% of work satisfaction and over 20% of internal work motivation variance is accounted for by job characteristics. These relationships were also found to be stable across samples.

Both the magnitude and pattern of relationships were remarkably similar to these reported by Rousseau (1977, 1978a) and Dunham (1977), despite the use of different measures of the constructs and very different types of samples. It has been suggested that part-time employees may be less inspired by job complexity than others because they are motivationally different (Gannon, 1975). The correlational data from this study suggest this is not the case. Jobs with higher levels of characteristics such as variety, autonomy, and task identity, are associated with positive affective responses, regardless of the part-time status and military nature of the sample. This may be an encouraging generalization of those relationships observed in previous studies that were based on full-time private, and profit-making work organizations (Rousseau, 1977, 1978a) and active duty military organizations (Stone, 1975).

This study produced some support for the hypothesis that technology and job characteristics mediate the relationship between functional specialty and

responses. In the analyses of the mediating variables, the two responses expected to show the strongest mediating effects clearly did so. Work satisfaction and internal work motivation were related to functional specialty and the relationship could be substantially accounted for by technology and perceptions of job characteristics. Other less task-determined responses were found to be related to functional specialty independent of technology and job characteristics. Although such results make it clear that our model is inadequate in explaining all response variance related to functional specialty, the process of differential relationships suggests that the results are not the artifact of common method variance or a general positive affect dimension underlying the job characteristics and response measures. For those outcomes that are clearly task based, job characteristics and technology are very useful constructs in the explanation of the effects of functional specialty. For the other responses, other constructs must be considered. A variety of unit, subunit, and work group variables may account for the effects of functional specialty on these less task-determined responses.

Although the responses included in this study were limited to self reports of satisfaction, motivation, and reenlistment intentions, the results may be generalizable to other responses including reenlistment behavior. Previous research on this same population has, in fact, shown very strong relationships between satisfaction, intentions, and actual reenlistment behavior when the base rate was at an ideal 50% (Katerberg, Hom & Hulin, 1978). Substantial differences among functional groups and technologies on these variables that are strongly related to reenlistment would suggest that these organizational variables would also be related to reenlistment, given an adequate base rate. Thus, it is likely that the present results have implications that go beyond the somewhat narrow set of dependent variables used.

The use of technology in this study and the relationships of the indices of technological complexity with job characteristics and responses confirm the conclusions of previous studies which suggest that technology is a useful construct in understanding affective responses (Rousseau, 1977, 1978b; Sayles & Strauss, 1966). Indices taken at the unit level that represented capital intensity, mechanization, and skill specialization were significantly related to several responses. Further, these indices, when used with job characteristics, were able to account for the function effect on some responses as hypothesized.

The value of these indices appears to be in their generality across all types of organizations. The measures used here are not restricted to production organizations, people processing agencies, nor are they dependent on individual perceptions (Pierce & Dunham, 1978b). These types of measures address the need for objective and general measures of technology that was noted by Pierce and Dunham (1978b). A useful next step would be the development of general and objective methods of assessing task characteristics. Such procedures would eliminate the alternative explanation that observed relationships are the result of common method variance.

The use of technology in this study also represents one of several concepts that may serve as conceptual links to other disciplines concerned with other aspects of organizations. Constructs that are common to a variety of theoretical frameworks can become the points of mutual interest leading to the development of more unified perspectives on organizations. With a large body of research now available on organizational structure and technology, it becomes useful to integrate this work with the growing body of information on the relationships between organizational variables and individual attitudes and behaviors. A common set of constructs will serve as a useful point of departure in the development of unified organizational models.

The purpose of this study was to examine some specific hypotheses concerning the explanation of the relationship between functional specialty and responses. Other possibly important structural positional and process variables were not considered here. The theoretical network must be expanded to include other organizational variables as well. Also, the mediating role of job characteristics should be considered in the relationships between these variables and responses. Hierarchical level in the organization may, for example, influence some responses through job characteristics while effects on other responses will be mediated by leadership patterns or social status. In addition, the role of individual differences must be considered. Although demographic variables were not able to account for the effects of functional specialty in this study, non-random assignment and self selection of persons to positions must not be ignored (Herman, Dunham, & Hulin, 1975; Rousseau, 1978a).

As the research continues, it is becoming clear that several aspects of organizational structure make a difference in the experiences and responses of members. It is also becoming clear that the job is an important point of contact between individual and organization. To the extent that members of particular functions experience similar job characteristics, they also show similar affective responses despite the fact that they may be in geographically separated units. Technology is useful in describing some of the important characteristics of organizational environments that result in task differences, that are important for some work related responses.

While it is clear that other constructs are necessary to fully account for additional variance in responses, technology and its reflection in individual job characteristics are a useful starting point in the construction of a more comprehensive nomological network.

FOOTNOTES

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Table 1

Means, Standard Deviations, and Reliabilities of Major Variables: Army and Air Guard Samples

Variables	Means		Standard Deviations		Internal Consistency	
	Air	Army	Air	Army	Air	Army
JCI Variety	14.28	14.50	4.00	3.41	.77	.54
JCI Autonomy	20.77	19.86	4.98	5.00	.82	.79
JCI Feedback	16.30	16.07	4.46	4.38	.84	.81
JCI Dealing with Others	10.84	10.87	2.36	2.49	.58	.53
JCI Identity	14.38	13.92	4.14	3.74	.90	.79
JCI Friendship Opportunities	27.21	27.11	5.12	5.29	.85	.84
Mechanization	16.80	15.56	6.00	5.46	.93	.65
Formalization	21.65	19.90	3.29	3.71	.63	.83
IOR Pay Satisfaction	15.91	16.74	4.72	4.86	.87	.85
JDI Promotion Satisfaction	13.13	13.99	9.21	8.35	.90	.86
JDI Work Satisfaction	30.87	31.09	12.06	11.77	.85	.82
JDI Co-workers Satisfaction	25.22	25.43	5.01	5.18	.90	.90
JDI NCOIC Satisfaction	40.75	40.94	12.43	11.73	.89	.88
JDI OIC Satisfaction	35.57	41.18	13.95	11.71	.92	.89
General Satisfaction	4.81	4.85	1.55	1.51	---	---
Internal Work Motivation	12.03	11.82	2.86	2.95	.86	.74
Intention to Re-enlist	4.81	4.58	2.43	2.31	---	---

Note. Army sample statistics are based on N = 676; Air sample statistics are based on N = 513.

Table 2

Correlations Among Major Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Variety	---	.40	.41	.22	.28	.17	.34	.07	.12	.19	.58	.17	.28	.12	.29	.35	.24
2 Autonomy	.36	---	.49	.35	.63	.37	.11	.08	.22	.13	.39	.10	.31	.24	.33	.28	.27
3 Feedback	.41	.51	---	.37	.56	.40	.26	.33	.29	.30	.50	.23	.47	.28	.44	.37	.28
4 Dealing With Others	.20	.36	.50	---	.36	.44	.13	.20	.12	.18	.21	.12	.20	.17	.25	.15	.25
5 Task Identity	.31	.69	.57	.44	---	.28	.14	.20	.21	.14	.36	.15	.27	.26	.35	.31	.36
6 Friendship Opportunities	.26	.45	.49	.54	.47	---	.12	.22	.22	.19	.28	.19	.30	.25	.35	.18	.21
7 Mechanization	.26	.26	.36	.27	.31	.37	---	.24	.06	.10	.39	.11	.12	-.11	.21	.27	.21
8 Formalization	.14	.15	.38	.28	.27	.30	.34	---	.09	.13	.20	.13	.20	.06	.19	.22	.19
9 Pay Satisfaction	.19	.30	.29	.25	.26	.35	.13	.22	---	.28	.31	.19	.29	.28	.46	.26	.30
10 Promotion Satisfaction	.28	.15	.32	.21	.17	.25	.11	.16	.26	---	.31	.20	.36	.36	.36	.17	.06
11 Work Satisfaction	.56	.37	.47	.29	.37	.38	.44	.36	.34	.37	---	.27	.47	.28	.52	.50	.37
12 Coworker Satisfaction	.16	.08	.16	.02	.13	.15	.09	.01	.10	.16	.27	---	.20	.10	.29	.17	.10
13 NCOIC Satisfaction	.13	.23	.23	.15	.24	.20	.06	.09	.27	.25	.26	.14	---	.31	.38	.31	.17
14 OIC Satisfaction	.24	.35	.35	.25	.32	.33	.28	.28	.31	.29	.40	.06	.28	---	.36	.21	.17
15 General Satisfaction	.40	.34	.46	.34	.34	.45	.37	.27	.39	.40	.52	.30	.31	.36	---	.41	.45
16 Internal Work Motivation	.31	.30	.38	.31	.35	.32	.36	.36	.31	.19	.48	.12	.21	.32	.36	---	.32
17 Reenlistment Intentions	.32	.33	.33	.27	.32	.33	.29	.26	.38	.19	.44	.14	.17	.30	.44	.39	---

Note. Correlations based on the Air Guard sample appear above the diagonal, N = 500. Correlations based on the Army Guard sample appear below the diagonal, N = 626. All correlations $\leq$ .11 are significant ($p < .01$, two-tailed test).

Table 3

Correlations Between Mean Ratings of Job Characteristics from Incumbents and Supervisors

Scale	Correlations
Variety	.14
Autonomy	.36*
Feedback	.36*
Dealing with Others	.23
Identity	.08
Friendship Opportunities	.26

Note. Correlations are based on 27 Army and Air Guard job classification means.

*$p < .05$ (two-tailed test).

Table 4

Army National Guard Regression of Responses on Job Characteristics

Predictors	Correlations with Criteria								
	Pay Satis.	Promotion Satis.	Work Satis.	Co-worker Satis.	NCOIC Satis.	OIC Satis.	General Satis.	Work Motivation	Intention to Re-enlist
Variety	.19	.26	.56	.17	.13	.24	.39	.32	.32
Autonomy	.31	.14	.36	.09	.22	.32	.34	.29	.34
Feedback	.29	.31	.48	.16	.24	.35	.47	.38	.35
Dealing with Others	.26	.20	.29	.04	.16	.24	.34	.31	.28
Identity	.25	.15	.38	.13	.22	.31	.33	.34	.31
Friendship Opportunities	.34	.23	.37	.16	.21	.32	.44	.32	.34
Multiple Correlations									
R	.40	.36	.64	.24	.28	.42	.57	.46	.46
R^2	.16	.13	.41	.06	.08	.17	.32	.21	.21

Note. Correlations $\geq$ .11 are significant ($p < .01$). All multiple correlations are significant ($p < .01$, $df = 6, 669$).

Table 5

Air National Guard Regression of Responses on Job Characteristics

Predictors	Correlations with Criteria: Pay Satis.	Promotion Satis.	Work Satis.	Co-worker Satis.	NCOIC Satis.	OIC Satis.	General Satis.	Work Motivation	Intention to Re-enlist
Variety	.14	.20	.59	.16	.29	.14	.31	.36	.25
Autonomy	.22	.14	.40	.10	.32	.25	.34	.28	.27
Feedback	.31	.31	.51	.22	.47	.29	.45	.37	.29
Dealing with Others	.11	.18	.21	.12	.19	.16	.25	.15	.25
Identity	.23	.15	.37	.14	.29	.27	.37	.32	.36
Friendship Opportunities	.22	.19	.28	.19	.29	.24	.35	.18	.21
Multiple Correlations									
R	.33	.34	.67	.26	.50	.35	.52	.45	.41
R^2	.11	.12	.45	.07	.25	.12	.27	.20	.17

Note. Correlations $\geq$ .11 are significant ($p < .01$). All multiple correlations are significant ($p < .01$, $df = 6, 506$).

Table 6

Mechanization Means and Standard Deviations

for Army Guard Functions

Function	Means	Standard Deviations
Infantry	14.2	5.1
Transportation	15.7	5.4
Artillery	15.4	5.2
Police	14.3	5.2
Medical	14.8	5.9
Maintenance	16.4	5.2
Aviation	20.4	4.3
Engineering	15.8	5.2

Note. Test of mean differences yielded F (7, 772) = 18.48, p <.01.

Table 7

Raw Means on Affective Responses for Army Guard Functions

Function	N	Pay Satis.	Promotion Satis.	Work Satis.	Co-worker Satis.	NCOIC Satis.	OIC Satis.	General Satis.	Work Motivation	Intent to Re-enlist
Infantry	301	16.7	14.5	29.1	24.8	41.3	41.2	4.8	11.4	4.4
Transportation	69	17.7	17.1	33.1	25.8	44.0	43.6	5.3	12.5	4.9
Artillery	46	12.4	14.5	26.4	25.4	32.6	32.1	3.7	11.1	3.3
Police	38	15.6	14.3	28.8	25.8	39.0	38.9	4.6	11.7	4.1
Medical	35	17.6	16.4	33.3	27.7	44.8	44.6	5.5	12.5	4.9
Maintenance	57	18.3	8.9	30.7	25.4	43.3	40.4	4.6	11.8	4.4
Aviation	88	17.3	11.9	39.5	26.9	39.3	45.9	5.4	13.1	6.1
Engineering	47	15.8	13.7	29.7	24.3	39.5	37.7	4.5	10.9	3.9
	690									

Table 8

Significant Discriminant Functions and Structure Coefficients From Army Guard Functional Group Analysis of Affective Responses

Measures	Significant Discriminant Functions I		II		III	
	$\underline{w}$	$r_{x\hat{y}}$	$\underline{w}$	$r_{x\hat{y}}$	$\underline{w}$	$r_{x\hat{y}}$
Pay Satisfaction	.15	.42	-.61	-.55	-.37	.05
Promotion Satisfaction	-.74	-.26	.08	-.08	.73	.81
Work Satisfaction	.47	.63	.54	.23	-.32	.30
Co-worker Satisfaction	.12	.25	.24	.19	.08	.23
NCOIC Satisfaction	-.02	.18	-.57	-.60	-.12	.18
OIC Satisfaction	.37	.52	-.20	-.26	.27	.46
General Satisfaction	.17	.49	-.34	-.25	.45	.63
Internal Work Motivation	.00	.42	.23	.14	.09	.30
Re-enlistment Intent	.35	.63	.24	.06	.24	.40
Eigenvalues	.26		.13		.07	
Proportion of Discriminable Variance	.52		.27		.14	

Note. $\underline{w}$ = Standardized discriminant weights; $r_{x\hat{y}}$ = Structure coefficients.

Table 9

Group Means on Significant Discriminant Functions From Army Guard Functional Group Analysis of Affective Responses

Functional Groups	Discriminant Functions I	II	III
Infantry	3.55	-2.05	2.39
Transportation	3.74	-2.04	2.73
Artillery	2.72	-0.86	2.23
Police	3.39	-1.66	2.39
Medical	3.92	-2.04	2.78
Maintenance	4.13	-2.18	1.64
Aviation	4.79	-1.35	2.42
Engineering	3.38	-1.78	2.15

Table 10

Raw Means on Job Characteristics for Army Guard Functions

Function	N	Job Characteristics: Variety	Autonomy	Feedback	Dealing With Others	Identity	Friendship Opportunities
Infantry	355	14.3	19.2	15.8	11.1	14.0	26.9
Transportation	82	14.6	20.5	16.7	10.6	14.1	27.2
Artillery	81	14.7	18.2	15.7	11.6	12.9	23.9
Police	43	12.7	17.8	14.8	11.0	12.7	26.3
Medical	40	15.6	22.4	17.2	11.2	15.2	28.1
Maintenance	64	13.8	20.2	14.8	10.3	13.1	26.9
Aviation	115	15.8	31.4	17.4	11.3	15.2	29.3
Engineering	61	14.5	18.5	15.4	10.4	12.5	25.8
	841						

Table 11

Significant Discriminant Functions and Structure Coefficients From Army Guard Functional Group Analysis of Job Characteristics

Measures	Significant Discriminant Functions					
	I		II		III	
	$\underline{w}$	$\underline{r}_{x\hat{y}}$	$\underline{w}$	$\underline{r}_{x\hat{y}}$	$\underline{w}$	$\underline{r}_{x\hat{y}}$
Variety	-.18	-.47	.76	.76	-.02	-.08
Autonomy	-.38	-.74	-.14	.14	.86	.10
Feedback	.12	-.44	.57	.49	.17	-.26
Dealing with Others	.44	-.21	-.06	.01	-.75	-.72
Identity	-.24	-.66	.05	.21	-.85	-.50
Friendship Opportunities	-.77	-.82	-.63	-.23	.02	-.31
Eigenvalues	.09		.04		.03	
Proportion of Discriminable Variance	.52		.23		.16	

Note. $\underline{w}$ = Standardized discriminant weights; $\underline{r}_{x\hat{y}}$ = Structure coefficients.

Table 12

Group Means on Significant Discriminant Functions From Army Guard Functional Group Analysis of Job Characteristics

Functional Groups	Discriminant Functions I	II	III
Infantry	-4.77	1.35	-2.58
Transportation	-4.98	1.49	-2.26
Artillery	-4.25	1.82	-2.43
Police	-4.40	0.98	-2.59
Medical	-5.24	1.61	-2.36
Maintenance	-4.90	1.11	-2.05
Aviation	-5.33	1.56	-2.55
Engineering	-4.57	1.52	-2.24

Table 13

Hierarchical Regression Analysis of Responses

on Function, Technology, and Job Characteristics for the Army Guard

Criteria	Multiple Correlations			Unique Variance Accounted for (ΔR^2) by:	
	Function	Technology and Job Characteristics	Combined Sets	Function	Technology and Job Characteristics
Pay Satisfaction	.33	.43	.48	.051*	.123*
Promotion Satisfaction	.24	.42	.47	.043*	.164*
Work Satisfaction	.28	.66	.68	.012	.381*
Co-worker Satisfaction	.16	.27	.28	.007	.056*
NCOIC Satisfaction	.33	.35	.45	.083*	.098*
OIC Satisfaction	.27	.43	.48	.047*	.157*
General Satisfaction	.30	.60	.61	.028*	.288*
Internal Work Motivation	.22	.48	.49	.014	.201*
Re-enlistment Intentions	.25	.49	.51	.012	.192*

Note. N = 676. All multiple correlations are significant, $p < .01$.

*$p < .01$.

Table 14

Mechanization Means and Standard Deviations

for Six Air Guard Base x Function Groups

Base	Function	Means	Standard Deviations
S	Maintenance	17.0	3.7
S	Support	17.8	4.6
C	Maintenance	16.2	4.5
C	Support	16.2	4.8
P	Maintenance	14.1	5.0
P	Support	15.2	4.3

Note. Test of mean differences yielded F (5, 559) = 6.47, $p < .01$.

Table 15

Raw Means on Affective Responses for Air Guard Base x Function Groups

Base	Function	N	Pay Satis.	Promotion Satis.	Work Satis.	Co-worker Satis.	NCOIC Satis.	OIC Satis.	General Satis.	Work Motivation	Intent to Re-enlist
S	Maintenance	62	17.0	12.4	35.5	27.4	42.2	39.8	5.3	13.1	5.5
S	Support	67	17.7	14.2	34.0	26.2	41.9	41.4	5.5	12.5	5.6
C	Maintenance	96	16.1	12.4	34.5	26.1	42.6	28.6	4.7	12.6	5.3
C	Support	114	16.1	14.0	26.3	24.3	39.7	38.8	4.6	11.5	4.5
P	Maintenance	69	13.7	10.1	28.8	24.7	36.4	26.8	4.5	12.0	4.5
P	Support	111	15.1	14.8	29.2	24.0	41.8	37.9	4.5	11.2	4.0
		519									

Table 16

Significant Discriminant Functions and Structure Coefficients from Air Guard Base x Function Analysis of Affective Responses

Measures	Significant Discriminant Functions					
	I		II		III	
	$\underline{w}$	$r_{x\hat{y}}$	$\underline{w}$	$r_{x\hat{y}}$	$\underline{w}$	$r_{x\hat{y}}$
Pay Satisfaction	.04	.04	.38	.62	-.49	-.46
Promotion Satisfaction	.31	.30	-.38	.09	-.32	-.41
Work Satisfaction	-.49	-.40	.16	.51	-.21	-.29
Co-worker Satisfaction	-.32	-.33	.39	.50	.00	-.09
NCOIC Satisfaction	.03	.00	-.15	.24	-.67	-.64
OIC Satisfaction	.80	.63	.57	.69	.21	-.01
General Satisfaction	-.03	-.10	.11	.59	.75	.18
Internal Work Motivation	-.25	-.36	.07	.41	.21	.03
Re-enlistment Intentions	-.21	-.29	.16	.48	-.17	-.04
Eigenvalues	.27		.14		.04	
Proportion of Discriminable Variance	.56		.29		.07	

Note. $\underline{w}$ = Standardized discriminant weights; $r_{x\hat{y}}$ = Structure coefficients.

Table 17

Group Means on Significant Discriminant Functions From Air Guard Base x Function Analysis of Affective Responses

		Discriminant Functions		
Base	Function	I	II	III
S	Maintenance	-1.91	5.89	-1.48
S	Support	-1.57	5.85	-1.45
C	Maintenance	-2.44	5.15	-1.83
C	Support	-1.13	5.16	-1.61
P	Maintenance	-2.19	4.77	-1.19
P	Support	-1.17	5.01	-1.62

Table 18

Raw Means (on Job Characteristics) for Air Guard Base x Function Groups

Base	Function	N	Job Characteristics: Variety	Autonomy	Feedback	Dealing With Others	Identity	Friendship Opportunities
S	Maintenance	70	15.2	20.2	17.8	10.9	14.7	28.0
S	Support	74	13.9	22.4	17.7	11.4	15.3	28.7
C	Maintenance	106	15.9	20.0	16.6	10.4	13.9	26.3
C	Support	131	13.1	20.2	15.4	10.9	14.3	25.8
P	Maintenance	74	14.3	20.3	15.8	10.6	14.1	27.3
P	Support	111	13.9	21.2	15.7	10.9	14.3	27.8
		566						

Table 19

Significant Discriminant Functions and Structure Coefficients from Air Guard Base x Function Analysis of Job Characteristics

Measures	Significant Discriminant Functions I		II	
	$\underline{w}$	$r_{x\hat{y}}$	$\underline{w}$	$r_{x\hat{y}}$
Variety	-.94	-.72	-.15	.20
Autonomy	.63	.24	.32	.54
Feedback	-.39	-.28	.52	.68
Dealing with Others	.38	.24	-.21	.32
Task Identity	.11	.11	-.27	.33
Friendship Opportunities	-.05	.06	.76	.88
Eigenvalues	.12		.05	
Proportion of Discriminable Variance	.59		.26	

Note. $\underline{w}$ = Standardized discriminant weights; $r_{x\hat{y}}$ = Structure coefficients.

Table 20

Group Means on Significant Discriminant Functions From Air Guard Base x Function Analysis of Job Characteristics

Base	Function	Discriminant Functions I	II
S	Maintenance	-.77	5.10
S	Support	-.12	5.30
C	Maintenance	-.95	4.76
C	Support	-.08	4.59
P	Maintenance	-.43	4.87
P	Support	-.17	4.97

Table 21

Hierarchical Regression Analysis of Responses

on Function and Job Characteristics for the Air Guard

Criteria	Multiple Correlations			Unique Variance Accounted for (ΔR^2) by:	
	Function	Job Characteristics	Combined Sets	Function	Job Characteristics
Pay Satisfaction	.24	.33	.39	.069*	.100*
Promotion Satisfaction	.16 (NS)	.34	.39	.036*	.128*
Work Satisfaction	.28	.67	.68	.021*	.385*
Co-worker Satisfaction	.23	.26	.32	.035*	.051*
NCOIC Satisfaction	.16 (NS)	.50	.52	.019	.248*
OIC Satisfaction	.39	.35	.51	.144*	.113*
General Satisfaction	.24	.52	.54	.025*	.235*
Internal Work Motivation	.22	.45	.47	.022	.178*
Re-enlistment Intentions	.24	.41	.46	.040*	.151*

Note. N = 513. All multiple correlations, except where indicated, are significant, $p < .01$.

*$p < .01$.

Figure 1

Summary of Relationships Among Constructs